

### **REMARKS**

Claims 1-11 are pending in the application. Claims 12-20 are canceled without prejudice or a disclaimer. Claims 1-11 stand rejected. Claims 1, 5, and 7 are independent claims.

Claims 1 and 5 stand rejected under 35 U.S.C. § 103(a), as allegedly being anticipated by Fenner *et al.* (U.S. 3,484,713) (“Fenner”) in view of the Wikipedia articles ([http://en.wikipedia.org/wiki/Lasing\\_threshold](http://en.wikipedia.org/wiki/Lasing_threshold) [the “Wikipedia article 1”]); and ([http://en.wikipedia.org/wiki/Spectral\\_linewidth](http://en.wikipedia.org/wiki/Spectral_linewidth) [the “Wikipedia article 2”]).

Claims 1 recites “a laser; a semiconductor optical amplifier, **wherein a band gap of the semiconductor optical amplifier is smaller than that of the laser.**” Claim 5 recites a similar laser and a similar amplifier. The support can be found in the original claims 3 and 6.

The United States Court of Appeals for the Federal Circuit held that to “reject claims in an application under section 103, **[the Office Action] must show an un rebutted prima facie case of obviousness** (*In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998) (citing *In re Deuel*, 51 F.3d 1552, 1557, 34 USPQ2d 1210, 1214 (Fed. Cir. 1995))). The *prima facie* case can be established if the prior art references teach **all features** in the claims (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)), including those in **functional language** (*In re Schreiber*, 128 F.3d 1473, 1478, 44 USPQ.2d 1429 (Fed. Cir. 1997)).

In rejecting claims 3 and 6, the claims which recite a semiconductor optical amplifier having a bandgap smaller than the bandgap of a laser or Fabry-Perot laser, the Office Action indicates that Fenner teaches a light source comprising a laser 1 and an amplifier 2, where the bandgap of its amplifier 2 is smaller than the bandgap of its laser 1 (the present Office Action, page 5, line 19 – page 6, line 6)).

Fenner, as read by the Applicant, discloses coherent radiation source comprising a laser 1 and an amplifier 2. However, Fenner does not disclose that the bandgap of the amplifier 2 is smaller than that of the laser 1. Instead, Fenner explicitly states that “[the] semiconductor materials of laser 1 and amplifier 2 are advantageously selected from materials having essentially the same bandgap energy...” (column 4, line 65-69).

Fenner, therefore, fails to teach “a laser; a semiconductor optical amplifier, wherein a band gap of the semiconductor optical amplifier is smaller than that of the laser,” as recited in claim 1 and similarly recited in claim 5.

Wikipedia articles 1 and 2, as read by the Applicant, compares the characteristics of outputs of the laser operated below and above the threshold value of the laser. In particular, Wikipedia article 1 teaches that the “linewidth” of the laser is smaller above the laser threshold than below the laser threshold. Meanwhile, Wikipedia article 2 defines the term “linewidth” as the width of a single peak output from the laser. As such, Wikipedia articles, at most, teaches that the width of a single peak output from the laser operated above threshold level is smaller than the width of a single peak output from the laser operated below threshold level.

Wikipedia articles, however, do not teach “a laser; a semiconductor optical amplifier, wherein a band gap of the semiconductor optical amplifier is smaller than that of the laser,” as recited in claim 1 and similarly recited in claim 5.

As Fenner and Wikipedia articles fail to teach all features of the claims 1 and 5, the references, alone or in combination, fail to render claims 1 and 5 obvious. The Applicant respectfully requests withdrawal of the rejections on claims 1 and 5.

Claim 7 stand rejected under 35 U.S.C. ' 103(a), as allegedly being obvious over Fenner in view of Fussgänger (U.S. 5,202,780) and Nakamura (U.S. 5,394,261).

Claim 7 recites “a light source section including a laser and a semiconductor optical amplifier..., wherein a band gap of the semiconductor optical amplifier is smaller than that of the laser.” The support can be found in the original claim 3 or 6.

Fenner, as noted above, does not disclose “a light source section including a laser and a semiconductor optical amplifier..., wherein a band gap of the semiconductor optical amplifier is smaller than that of the laser,” as recited in claim 7.

Fussgänger, as read by the Applicant, discloses an optical communication system. However, nowhere in the system is there “a light source section including a laser and a semiconductor optical amplifier..., wherein a band gap of the semiconductor optical amplifier is smaller than that of the laser,” as recited in claim 7.

Nakamura, as read by the Applicant, also discloses an optical communication system comprising, among others, a laser diode 2. However, nowhere in Nakamura is there a disclosure of “a light source section including a laser and a semiconductor optical amplifier..., wherein a band gap of the semiconductor optical amplifier is smaller than that of the laser,” as recited in claim 7.

As such, Fenner, Fussgänger, and Nakamura fail to disclose or teach all features recited in claim 7, and the references, alone or in combination, fail to render claim 7 obvious. The Applicant respectfully requests withdrawal of the rejections on claim 7.

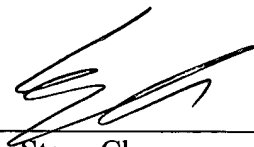
Other claims in this application are each dependent on the independent claims 1, 5, and 7 and believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

Amendment  
Serial No. 10/798,662

Should the Examiner deem that there are any issues which may be best resolved by telephone, please contact the Applicant's undersigned representative at the number listed below.

Respectfully submitted,

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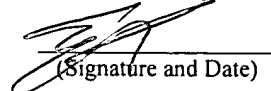
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